mail, call waiting, and call forwarding. These groups are unhappy because they believe that consumers from their states are in effect contributing to carriers who leverage the funds to make high rates of return.

Others point out that the universal service support goes to those carriers that have costs above a certain percentage above the national average, and that cost for these carriers remains the same, regardless of whether or not the carrier is receiving revenue from vertical services. They also maintain that even though some high-population states contribute more to the low-population density states for the High-Cost fund, they receive more funds from the other programs. Since those states are more highly populated, they generally have more schools and libraries that receive support, as well as a larger total number of people eligible for the Low-Income program. In the end, they maintain, the low and high-population density states more or less equal each other out as far as contributions and support.

Businesses, especially those who are heavy telecommunications users, are also unhappy with the amount of revenue they are forced to pay into the Fund. For identical services, rates for business users are generally set substantially higher than those for residential users. This inequity, they claim, is exacerbated if the businesses are located in urban areas, since the local rates in urban areas are generally set slightly higher than cost so that rates in rural areas can be priced slightly lower than cost. This system may undermine competition in the rural markets, because competitors cannot match a price that is below cost. They assert, therefore, that government decision-makers should assess whether the current system properly considers affordability, economic efficiency and consumer welfare.

There is a genuine need for a deeper understanding of the unique viewpoints of the various stakeholders involved in the universal service debate. While some of these views appear to be far apart, there is ample opportunity for consensus.

B. The CECA Process

As in previous consensus-building projects, CECA convened a broad-based panel of stakeholders to serve in the Universal Service Forum. Participants included local and interexchange telecommunications carriers, information technology companies, Internet service providers, local, state and federal regulators, legislators, and consumer organizations. The objective of the process was to arrive at one of three outcomes for developing policy guidance on issues under discussion:

- Consensus on policy options;
- Agreement on which policy options are clearly not acceptable;
- Identification of policy options that participants in the Forum consider acceptable.

The report culminates with recommendations to policymakers made by CECA, based upon a careful analysis of the stakeholder perspectives and interests. CECA attempted to promote agreement on as many issues as possible, and this report reflects the diversity of views expressed by stakeholders. This report does not purport to represent the official position of any agency, company or organization. CECA assumes full responsibility for the report and its contents.

During the CECA Universal Service Forum meetings, subcommittees and working groups were appointed to focus on specific issues of funding, supported services, and eligibility. Each subcommittee met on numerous occasions and produced a series of findings that were later discussed in the full committee meetings, and which laid the foundation for this report.

C. Structure of the Report

The report is structured into four Parts, each of which was shaped by the participation and discussions generated by Forum participants.

Part One provides an introduction to the federal Universal Service program, its mandate, its accomplishments, and the areas that are still in need of attention. This Part provides a brief overview of the main issues that overshadow the effectiveness of the program, and the various stakeholder perspectives. Part One concludes with a historical review of the program, how the program has changed, and how recent developments are once again altering the course of the program.

Part Two provides a more detailed examination of the issues. The concerns of the Forum participants generally fell into one of three main categories. These categories of issues were examined further by discrete subcommittees, in which many of the Forum's conclusions and recommendations were formulated.

Part Three contains the recommendations and observations of the CECA Universal Service Forum. Based on the discussions and issues raised throughout the Forum, CECA developed a series of recommendations. On issues that proved too complex to develop a recommendation in the limited time of the Forum, CECA expresses observations that are important to highlight.

Part Four, which includes the Appendices, contains technical information relating to the Fund, including a detailed depiction of the flow of funds. The sources and uses analysis describes how the funds are collected, how they are dispersed, and which institutions are relevant in the process. The Appendices include a flowchart that can be used by policymakers as a tool for determining the appropriate timing for including additional services into the Fund, the text of the relevant Universal Service provisions in the Telecommunications Act of 1996, and explanatory charts for various alternative funding options.

II. Milestones in the Evolution of Universal Service: A Brief History

The roots of the universal service concept may be found in the turn-of-the-century business strategy of Theodore Vail, then President of AT&T. Faced with a telecommunications system comprised of numerous independent phone companies competing for customers, and utilizing separate networks and equipment, Vail envisioned a unified network in which callers could reach anyone using any telephone. Vail's concept was "one system, one policy, universal service." Vail's hope for a single system and a single policy likely had more to do with creating a monopoly for his company than working toward a broader social goal of nationwide access to a telecommunications network, but by the time of the passage of the Communications Act of 1934, the concept of connecting the nation, and indeed the world, through a telecommunications network had evolved to encompass a broad social policy statement embodied in the preamble to the Act:

> ...to make available, so far as possible, to all people of the United States a rapid, efficient, Nation-wide, and worldwide wire and radio communication service with adequate facilities at reasonable charges.

Lacking any accompanying specific regulatory mechanisms, and devoid of the term universal service, the statement contained in the Act nevertheless became the impetus and regulatory authority for subsequent action on universal service to foster ubiquitous (universal) telephone service to all Americans – recognizing affordability as a fundamental element of service – regardless of geographic location or income.[7]

In the context of the monopoly telephone model, in which one company was obligated to serve all customers in a given geographic region absent competition, policymakers focused on increasing telephone penetration, rather than interconnection, which was less relevant in a monopoly provider context. Most Americans came to view the telephone as a necessary condition for participation in the economic, political, and social aspects of modern society. It soon became evident, however, that millions of rural and low-income Americans lacked basic telephone service. At the time of the passage of the Communications Act of 1934, for example, just 40 percent of U.S. households had telephone service.[8] It was later established that among the leading predictors of telephone penetration were income and the cost of building in sparsely populated and geographically large areas, and so the ubiquity (and, later, affordability) of basic telephone service was a goal that came to be pursued by many policymakers in the mid-twentieth century.

To address the needs of rural Americans, for example, Congress established the Rural Electrification Administration (REA, and later renamed the Rural Utilities Service RUS)

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[7] Cooper, Mark, "Universal Service: A Historical Perspective and Policies for the 21st Century," Benton Foundation & Consumer Federation of America, 1996; L. Gasman, "Universal Service: The New Entitlements and Taxes," Cato Institute, June 1998; Sharon Gillett, "Technological Change, Market Structure, and Universal Service," Massachusetts Institute of Technology, 1994.

[8] "Historical Statistics of the United States: Colonial Times to 1970," U.S. Department of Commerce, Bureau of the Census, 1975.

loan program, which was started in 1949 and began to target loans to telephone companies serving rural areas. The percentage of farm households with telephone service rose from 35 percent in 1949 to 96 percent in 1983.[9]

A. Passage of the Communications Act of 1934

Following the passage of the Communications Act in 1934, regulators utilized various cost allocation and recovery approaches in an effort to increase telephone penetration rates nationwide. Because the cost of providing service to some customers exceeded the cost of providing service to others, a system of "high cost support" was developed that included a series of cross subsidies and geographic rate averaging to make telephone service affordable for those in high cost areas.[10] There was not yet a universal service "fund" as we know it. Instead, urban and business customers implicitly supported rural customers through a system of embedded rate levels and rate structures for the various services. Long distance rates were kept artificially high to support contributions to the mecahnism to offset high-cost local calling. By 1980, 94 percent of U.S. households had telephone service.[11] As long as this process functioned in the context of a monopoly market, it amounted to little more than a complex subsidization process embedded in an internal accounting mechanism for the monopoly provider. The subsidy system would become much more complex after the divestiture of AT&T.

B. Break Up of AT&T

Once policy changed, first to allow, and then to foster competition, the approach to funding universal service had to be altered. In 1982 AT&T agreed to settle the antitrust suit that had been brought against it by the U.S. government in 1974. The settlement divested AT&T of its local phone service on January 1, 1984, and created seven regional holding companies (Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis, Southwestern Bell, and U.S. West) to handle local operations. The holding companies, also known as the Regional Bell Operating Companies (RBOCs) were to provide local exchange service and were barred from the long distance market and from manufacturing telecommunications equipment.

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[9] Federal Communications Commission, Preparation for Addressing Universal Service Issues: A Review of Current Interstate Support Mechanisms, February 23, 1996.

[10] Geographic rate averaging is the process of creating uniform rates for toll calls despite the variation in costs (i.e. the cost of calls on routes with high traffic may be lower than the cost of calls on routes with less traffic).

[11] Some analysts have questioned the attribution of increased telephone penetration in the U.S. to these regulatory mechanisms, arguing that the cross-subsidies between high and low cost, residential and business customers did not really begin in earnest until 1970, when a majority (85 percent) of U.S. households already had telephone service. (M. Mueller, "Universal Service in Telephone History: A Reconstruction," *Telecommunications Policy*, Vol. 17, Issue 5, p. 355). Since that period, and with the benefit of a subsidy system, the penetration rate has risen to more than 94 percent. See FCC, "Trends in Telephone Service," 12/2000, Table 12.1.

Following the breakup of AT&T in 1984 and the subsequent wave of deregulation, it became evident that long-standing practices of rate averaging and implicit subsidies which had historically distorted the true costs of the telephone network, were increasingly untenable. State and federal regulators decided to continue to allow long distance rates to support local rates in high cost areas, and the mechanism for doing so was to require all interexchange carriers (AT&T as well as new entrants, such as MCI and Sprint) to pay access charges for interconnecting with local exchange carriers in order to reach end users.

C. Passage of the Telecommunications Act of 1996

The Telecommunications Act of 1996 (the 1996 Act) sought to reform the regulation of telecommunications to foster competition and innovation.[12] It was the first major rewrite of the Telecommunications Act since its inception in 1934. The 1996 Act touched upon all elements of telecommunications regulation, from telephone services to broadcast television to cable television to the emerging Internet market.

With the passage of the 1996 Act, the universal service program was dramatically altered to address the inadequacies of the old mechanisms that were causing competitive distortions in a newly deregulated marketplace. Also significant was that the 1996 Act codified the concept of universal service in Section 254. In it, the Act called for the creation of a Federal-State Joint Board on Universal Service (Joint Board) to review and make recommendations on matters involving universal service. The funding mechanism became more explicit and the scope of the program was expanded to include services not previously covered and ensure the program's continuation in the new economy. In Section 254, Congress set out six principles to guide universal service policies:[13]

- *QUALITY AND RATES.--Quality services should be available at just, reasonable, and affordable rates.*
- *ACCESS TO ADVANCED SERVICES.--Access to advanced telecommunications and information services should be provided in all regions of the Nation.*
- *ACCESS IN RURAL AND HIGH COST AREAS.--Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in*

[12] In the Joint Explanatory Statement of the Committee of Conference, 1996 Act is designed "to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly the private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition. . . ." Joint Explanatory Statement of the Committee of Conference, H.R. Conf. Rep. No. 458, 104th Cong., 2d Sess. at 113.

[13] 47 U.S.C. § 254(b). This section also allows the Joint Board and the FCC to create additional principles that they deem "necessary and appropriate for the protection of the public interest, convenience, and necessity and are consistent with this Act." 47 U.S.C. § 254(b)(7).

urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

- *EQUITABLE AND NONDISCRIMINATORY CONTRIBUTIONS.--All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.*

- *SPECIFIC AND PREDICTABLE SUPPORT MECHANISMS.--There should be specific; predictable and sufficient Federal and State mechanisms to preserve and advance universal service.*

- *ACCESS TO ADVANCED TELECOMMUNICATIONS SERVICES FOR SCHOOLS, HEALTH CARE, AND LIBRARIES.--Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described in subsection (h).*

The FCC and the Joint-Board have taken a number of steps to implement the mandate of the 1996 Act. The resulting universal service mechanism is detailed in Part Four of this report.

D. Recent Developments

During 1999, the FCC encouraged the industry, both the access users (the long distance carriers) and access sellers (the price cap local exchange carriers) to make a joint proposal to revise the existing access charge rules and universal service funding implicit in access charges.[14] This joint effort was called the Coalition for Affordable Local and Long Distance Service proposal, or CALLS. The members of the Coalition included four of the five largest local exchange companies (Bell Atlantic, BellSouth, GTE, and SBC)[15] and two of the three largest long distance companies (AT&T and Sprint).

The CALLS decision adopted by the FCC in May 2000 included an integrated universal service and interstate access reform plan covering price cap incumbent local exchange carriers. Of importance to the discussion of universal service is the establishment of explicit interstate universal service funding that will provide support to replace approximately $650 million of implicit support collected through interstate access charges and the simplification of the patchwork of common line charges into one subscriber line charge (SLC),[16] providing for deaveraging of those rates without undermining universal

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[14] For purposes of its regulatory proposals, often the FCC divides the local exchange carriers into two groups. One group is those carriers under price cap regulation; the other is those under rate-of-return regulation. These two groups are drawn roughly between the large Bell operating companies for whom price cap regulation was mandatory (along with some of the larger incumbent local exchange carriers that adopted the price cap mechanism) and the small incumbent local exchange carriers that have chosen to remain on rate-of-return regulation.

[15] The fifth, U.S. West, also participated in discussions, but did not become a part of the CALLS.

[16] The once unified residential subscriber line charge (SLC) may rise from $3.50 to $6.50 per month in future years.

service. The CALLS Order is currently on appeal in the United States Court of Appeals for the Fifth Circuit where it is being criticized for having a SLC that some maintain would over-recover network costs. The CALLS Order and its subsequent petition for review have raised questions about how high the SLC may be set consistent with maintaining affordable universal service and sharing network costs between different services.

At the time of this writing, the FCC also has before it a proposal by the Rural Task Force (RTF) addressing the need for reforms for rural high cost universal service support mechanisms as a foundation for implementing a rural universal service plan. The FCC is also considering a proposal by the Multi-Association Group (MAG) that addresses interstate access and universal service support reform for incumbent local exchange carriers subject to rate of return regulation.[17]

[17] Information on both plans can be found at http://www.fcc.gov/ccb/universal_service.

PART TWO: UNIVERSAL SERVICE ISSUES

III. Issues Affecting the Funding of the Universal Service Program

A successful universal service mechanism begins with a clear and sustainable source of funding. On this, most constituencies agree, even though they may not agree on how the Fund should be collected or who should be required to contribute. For the time being, it is clear that the current funding mechanism is adequate to fulfill the mission of universal service. There are important issues concerning which telecommunications providers should contribute to the system and how the necessary funds should be collected. There are fundamental questions concerning which companies should be considered telecommunications providers, and therefore subject to contribution to the fund. There are arguments that since universal service is a national policy, and one from which everyone who uses the communications system directly benefits, perhaps even non-telecommunications industries should contribute. Some even suggest that the entire system should be removed from its current funding mechanism and that Congress should allocate funds through general tax revenues, as other social policy or public works programs are funded.

The changing face of the telecommunications industry – through both the introduction of new competitive players and technological innovations – has created a need to reassess the means by which the Universal Service Fund (USF) is supported. As once distinct industries and markets converge – and as providers offer bundles that include both interstate and intrastate telecommunications services and non-telecommunications services at a single flat rate – new questions arise as to how the current mechanism is able to handle the evolving marketplace. For example:

- Is the Fund sustainable given the means by which it is currently funded?
- Are the contributions collected in an equitable manner with respect to both carriers and end users paying into the Fund?
- Are the contributions collected in a competitively neutral fashion so that no class of carrier is either aided or hindered competitively because of the means in which funds are collected?
- Is the current collection mechanism efficient in terms of the incentives it may create and how these incentives operate to allocate the resources?

Some argue the answer to all of these is no – that competition and new technologies may undermine the foundation of the program; that some users of the network may not be paying into the program leaving others to shoulder more of the burden; and that the current payment scheme creates economic inefficiencies. There are certainly also viewpoints to these statements. Based on the analysis that follows, the Forum had sufficient concern regarding the shortcomings of the current funding mechanism to warrant an examination of

several alternative funding mechanisms that could better serve the public by being more sustainable, equitable, competitively-neutral, and efficient.

A. Sustainability: Challenges in Meeting the Obligations of the Program

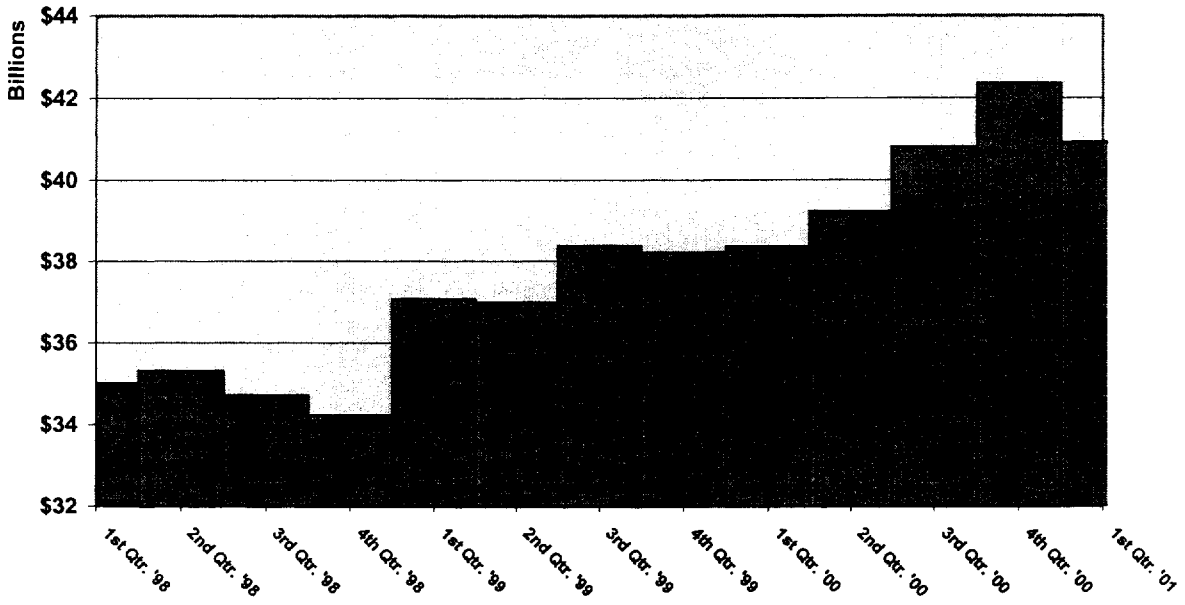
A core issue in the examination of the current funding mechanisms is whether they can sustain the statutory goals established for universal service in the 1996 Act. The issue exists with respect not only to sustaining current responsibilities but also to how well it can evolve to offer the services, potentially advanced services, that meet the needs of future generations. Any discussion of subsidizing some degree of advanced services through the program or increasing the reach of the low-income programs must acknowledge the extent to which concerns about sustainability would be exacerbated by such expanded responsibilities, all other things being equal.

As explained in Part Four, contributions to the program are currently based on a carrier's interstate end-user telecommunications revenues from the prior year and are assessed by applying an FCC-determined contribution factor (percentage) to these revenues. Those carriers that are required to pay into the program determine how they will collect their required share of the contribution on an individual basis.[18] The current collection factor is 6.6 percent of interstate end-user telecommunications revenues.[19] Table One shows the levels of interstate end-user telecommunications revenues projected into the first quarter of 2001.

[18] This leads to a number of different mechanisms for collecting the funds, such as separate line-items on bills and inclusion of universal service fees bundled into per-minute rates.

[19] *Proposed First Quarter 2001 Universal Service Contribution Factor*, DA 00-2764 (released 12/8/2000).

Table One: Universal Service Base: Interstate and International Revenue as Reported by Carriers



* Source: USAC[20]

The data may show general increases in interstate revenues that demonstrate a growing base to which the contribution factor is applied. However, it is important not to place undue reliance on future increases in the base commensurate with the trend of data portrayed since there are two market trends that may affect the future of interstate revenues as a funding source for the program:

First, there has been tremendous growth in new technologies that are substitutes for traditional interstate communications services. Some of these are not telecommunications services, *e.g.*, sending messages by e-mail or instant messaging. Others, such as the provision of long distance telephone service over the Internet (known as Internet Protocol telephony, or IP Telephony), are not classified as telecommunications services even though they represent another way of providing interstate telecommunications services. These services are increasingly substituting for services that are classified as interstate telecommunications services for purpose of contributing to the program. Thus, such substitution mentioned above have the potential of taking away customers and thus

[20] This data comes from interstate and international revenue information reported by carriers on FCC Form 499. The FCC uses this revenue information, along with the estimated interest earned, the funding requirements of the universal service support mechanisms, and program administrative costs submitted by USAC 60 days prior to the start of each quarter to develop contribution rates, which are then used by USAC to bill contributors on a monthly basis for their Universal Service Fund contributions during the next quarter. The data are carrier estimates and some of the fluctuations result from prior period corrections.

revenues from traditional interstate carriers and providing increasing pressure on interstate rates and the revenues that are used as the base of the program. While this trend has the potential for substitution, the impact has not yet been quantified with a degree of precision necessary for determining their effects on universal service.

Second, increasingly, interstate telecommunications services are being offered in "bundles" with intrastate telecommunications services and with information or advanced services. The latter are not categorized as telecommunications services by incumbent carriers, wireless providers, and new wireline entrants. Bundling these services together complicates the process of apportioning revenues between the interstate and intrastate jurisdictions for purposes of assessing contributions to the program.

The rapid changes taking place in the marketplace – both in terms of converging services and emerging competition – have the potential to have a serious impact on the long-term sustainability of the program, even if demand is static.

1. Impact of New Technologies and Services on the Sustainability of the Program

The growth of Internet telephony, also known as Internet Protocol telephony (IP telephony) or Voice over Internet Protocol (VoIP), is represented by services such as Dialpad.com and Net2Phone that use the Internet as an alternative to phone-to-phone connections over the public switched telephone network (PSTN).[21] Although the combination of equipment and services used to obtain these services vary considerably, users of these services often make long distance telephone calls through Internet Service Providers (ISPs) by using their computers. IP telephony is a service that provides long distance voice service, using specialized customer-provided equipment and a means of transmission offered by an ISP that had previously been used only for data services. The FCC does not regulate ISPs as telecommunications providers or common carriers under Title II of the Communications Act.[22] Therefore, IP Telephony providers do not pay carrier access charges or make direct contributions to the Universal Service program as do telecommunications providers.[23] IP telephony providers may purchase transport from carriers that pay into the Universal Service program, so their use of the network requires them to make indirect payments to the program via surcharges they pay when when they purchase service from telecommunications providers.

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[21] The PSTN usually refers to the voice telephone network while the Internet is a collection of networks, which may include parts of the PSTN, but also includes packet-switched data networks.

[22] Title II of the Communications Act deals with the regulation of common carriers. This regulation includes rate regulation.

[23] The FCC has a special exemption from carrier access charges for ISPs, under which ISPs are treated as local phone customers and are exempt from the interstate access charges paid by carriers. Thus, rather than paying the higher carrier access charges, ISPs simply purchase phone lines from the local phone company as any local business would do and pay as end users.

The FCC's regulatory treatment of ISPs stems from its Computer II decision[24] in 1980 in which the FCC concluded that it had no Title II jurisdiction over the services it called "enhanced services,"[25] even if those enhanced services used common carrier transmission facilities. The FCC's rationale was twofold: firstly, data processing or information services were not considered telecommunications services, so they did not fall within the jurisdiction of the FCC. Secondly, ISPs, like customers, were viewed as end users, and regulation would have meant carving out new lines of distinction between those who are carriers and those who are end users. Another rationale for not regulating these enhanced services was to advance innovation and competition by encouraging the proliferation of these services and promoting the growth of entirely new industries.[26] In the 1996 Act, Congress renamed the distinction between basic services and enhanced services as a distinction between telecommunications services and information services and added definitions for both to the Act.[27] There was a debate regarding these definitions and whether ISPs fell clearly under information services, which are exempted by the FCC from Title II regulation. Currently, policymakers are debating whether IP telephony constitutes a telecommunications service or an information service, since it is becoming more difficult to clearly classify it as one or the other.

Supporters of the exemption assert that the Internet industry is thriving, and that consumers are getting goods and services conveniently and at competitive prices, and that regulation could only hamper all of the positive benefits. They also point out the fact that through leasing lines from carriers that pay into the program, Internet providers do contribute, albeit indirectly. As large end users, they contribute significantly, but being large end users does not mean that their status should be changed to that of a telecommunications provider. Opponents of this exemption raise issues of competitive neutrality and argue that these services ride on the telecommunications network but are not required to apply the contribution factor to their interstate revenues or otherwise pay directly into the support mechanisms as carriers must do.

Given the current regulatory status of ISPs with regard to Universal Service program contributions and payment of access charges, there may be cause for concern about sustainability of the program in the future even if there is no growth in the size of the program. To the extent that IP Telephony cuts into the market for interstate telecommunications services and reduces the revenues of carriers that pay into the Fund, the available pool of funding under the current universal service mechanism will

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[24] Regulatory & Policy Problems Presented by the Interdependence of Computer and Communications Services & Facilities (Computer I), 7 FCC 2d 11, 13 (1966) (Notice of Proposed Rulemaking); 28 FCC 291 (1970) (Tentative Decision); 28 FCC 2d 267 (1971) (Final Decision), aff'd in part sub nom. GTE ServiceCorp. v. FCC, 474 F.2d 724 (2d Cir. 1973), decision on remand, 40 FCC 2d 293 (1973).

[25] In this decision, the Commission defined all services offered over a telecommunications network as either basic or enhanced. Basic service was defined as "transmission capacity for the movement of information," and enhanced service was defined as "any offering over the telecommunications network which is more than a basic transmission service." (Computer II Final Decision, 77 FCC 2d at 419, para. 93-94). Enhanced services involved those using computer processing applications accessing stored content.

[26] Computer II Final Decision, 77 FCC 2d at 420, para. 129.

[27] In effect, the distinction made between these terms amounted generally to a renaming of the terms: in the 1996 Act, basic services became telecommunications services, and enhanced services became information services.

diminish.[28] Thus, carriers who continue to contribute to the program under the current contribution mechanism will be required to contribute a greater percentage of their interstate revenues if current funding levels are to be maintained.[29]

Currently, some customers are able to secure lower rates for toll calls by obtaining their interstate telecommunications services over the Internet rather than through conventional interstate telecommunications carriers. Indeed some customers are offered IP Telephony for free in exchange for having banner advertisements displayed on their screens. If the underlying price differential of providing these services over the Internet represents real and sustainable cost advantages, then the provision of services in this manner may have real and lasting benefits to consumers. On the other hand, to the extent the lower price reflects only a regulatory distortion created by Internet service providers who are not required to contribute to the program, then the market advantage is artificial and may not serve the public interest in the long run. In the end, the magnitude of the consumer benefit of allowing Internet telephony to continue free from universal service obligations will have to be weighed against the availability of funds and sources of funds to sustain the program.

2. Impact of Packages of Services on the Sustainability of the Program

A second factor that may threaten the stability of interstate revenues as a funding source is the emergence of packages of interstate telecommunications services, intrastate telecommunications services, and non-telecommunications services offered by carriers. All providers – Incumbent Local Exchange Carriers (ILECs), Competitive Local Exchange Carriers (CLECs), cable companies and wireless carriers – are increasingly offering bundles of intrastate and interstate services including Internet, telephony, and multichannel video at flat rates. These rates are not easily separable into intra- and interstate revenues for purposes of ascertaining the available revenues for universal service program contributions. Without a prescribed means for consistently separating the intra- and interstate portions of a flat fee, the program is vulnerable to understatements of the percentage of the total flat fee that should be used in calculating contributions to the program, or alternatively, to the improper inclusion of revenues that are not generated by interstate telecommunications services. To the extent to which this occurs, there is the potential of decreasing the pool of interstate revenues from which to draw funding.

B. Equity and Competitive Neutrality: Who Pays and Who Does Not

As implementation of the Telecommunications Act of 1996 removes barriers to entry and the telecommunications marketplace becomes increasingly competitive, issues of equity and competitive neutrality in the collection of contributions to the program become more acute. The 1996 Act states that "every telecommunications carrier that provides interstate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, to the specific, predictable, and sufficient mechanisms established by the Commission to

[28] Estimates of the growth of IP Telephony vary widely but there is general agreement that IP Telephony currently represents only a nominal amount of interstate traffic.

[29] This also raises issues of equity as the percentage factor assessed on interstate revenues rises because the base it is applied against falls.

preserve and advance universal service."[30] The notion of collecting funds on an equitable and competitively neutral basis is increasingly important in a marketplace characterized by the convergence of previously separate markets – for example, interstate telephony provided over the Internet or IP networks and service offerings comprised of interstate and intrastate telecommunications services and non-telecommunications services that are available at a single fixed price.

All these market trends require that public policy decision-makers and lawmakers pose questions about what to include in the definition of interstate telecommunications and whether it is appropriate to look beyond interstate revenues as the sole funding source and include intrastate and other revenues – or possibly entirely new schemes of revenue generation for the program, ranging from collecting from the general tax base to changing the mechanism from an increasingly difficult-to-define revenue base to a per line or per number charge.

Proponents of an expansion in the base for contributions to the program generally point to two factors: (1) market convergence means that a broader assessment base is necessary to ensure competitive neutrality, and (2) network externalities whereby users of the network benefit from the interconnection of as many people as possible and see universal service support, either by assisting connection of those with low-incomes or very high costs of connection, as a necessary cost of using the network. Since all users of the network benefit from its existence and from the fact that a broad base of users is connected to the network, then the case is made that all users should be responsible for supporting it.

In the Act, a telecommunications carrier is defined as "any provider of telecommunications services."[31] A *telecommunications service* means, "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used."[32] The importance of a service being designated an interstate service is that it is then subject to federal (FCC) as opposed to state jurisdiction. Finally, an *information service* is "the offering of a capability for generating, acquiring, sorting, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of such capability for the management, control or operation of a telecommunications system or management of a telecommunications service."[33] These are the statutory definitions. As the expert agency, the FCC is given the authority to interpret these definitions.

Prior to the 1996 Act, only interexchange carriers were required to contribute to the Universal Service program. When universal service was codified in the 1996 Act, Congress chose to expand the universe of contributors to "every telecommunication carrier that provides interstate telecommunications services." The Commission was given the authority to exempt certain carriers, if their contribution would be deemed *de minimis*. The

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[30] 47 U.S.C. § 254(d).
[31] 47 U.S.C. § 153.
[32] Id.
[33] Id.

Commission was also given the authority to require any other providers of interstate telecommunications to contribute to the program if the public interest "so requires."

As a result of the 1996 Act, the number of telecommunications service providers required to contribute to the program increased. Two of the rationales for including a broader class of carriers as contributors were equity and competitive neutrality; all who provide common carrier service using the telecommunications network should pay into the program. As a result, contributors now include all telecommunications service providers, including for the first time companies that provide cellular telephone, satellite and paging services.[34]

As discussed earlier, the Act differentiates between ISPs and providers of telecommunications because they provide enhanced or information services over the telecommunications network as opposed to providing basic transmission services (a distinction worth noting in that ISPs purchase basic transmission services from carriers and then use those services to deliver information services to their customers). The emergence of IP Telephony services has fueled a debate regarding: (i) the proper classification of IP telephony as either a telecommunications service or an information service; and (ii) whether, regardless of that classification, it should be required to contribute to the universal service mechanisms. Critics point out that when ISPs provided only data and data-processing services, the distinction between information services and telecommunications services was more obvious. Today, however, some services are almost perfectly substitutable, as subscribers have the option of communicating by voice over the Internet much in the same way as they would use a phone. As a result, these groups argue that the difference in regulatory treatment between some information services, particularly IP telephony and telecommunications services is becoming increasingly difficult to maintain.

The regulatory asymmetry between different service providers may become untenable if, from a consumer's perspective, they are all providing a similar product. The degree to which these services converge – without the requirements for paying into the program adapting – may provide an unfair competitive advantage to those who are not paying into the program. The carriers that do not have to contribute to the program may enjoy lower input prices which could enable them to set lower prices. This in turn would increase their market share and further erode the revenue base of the program or would require the payment system to be revamped into a competitively neutral structure, *e.g.*, by assessing contributions to end users or tax payers rather than carriers.

C. Efficiency: How Universal Service Goals Impact Phone Rates

The current telecommunications system relies on a number of support mechanisms that have collectively been used to achieve universal service goals. While some characterize these support mechanisms as subsidies, others argue that these mechanisms are a reasonable means to recover the allocated costs of a network that provides multiple

[34] See Universal Service Order, 12 FCC Rcd at 9175, para. 780, for a more complete list of examples of interstate telecommunications services.

telecom services. The perceptions of these subsidies, real or exaggerated, have spurred significant controversy in regards to the Universal Service program over what economists call allocative efficiency, weakening the support and undercutting the value of the program. These points of contention include such questions as: [35]

- Do long distance rates subsidize local rates? Some claim that the rates of long distance calls have been held artificially high in order to keep local rates lower. They have also, in the past, been held above cost to accommodate the access charge structure. However, as access charges have been driven down, there has been, at times, a corresponding decrease in toll rates. Others also suggest that the discussion of long distance rates subsidizing local rates relies completely on the full allocation of the loop cost to basic local service.

- Do lower cost urban areas subsidize higher cost rural areas? It is well established that service cost declines as population density increases, making urban areas less expensive to service than rural areas. Historically, however, urban rates have been set above costs (usually through a system of averaging rates across large geographic areas), leading some to suggest that they are supporting rural rates. Others maintain that while urban rates are higher than rural rates, they also have much larger local calling zones and more "bells and whistles."

- Do business users subsidize residential consumers? For an identical service, rates for business users are generally set higher than those for residential service. While some may contest whether there is a subsidy flow from business to residential - consider, for example, how low Centrex rates are – in general, rates for the same services are set higher for business customers.

In its early stages, during the monopoly environment of AT&T, the support flows represented accounting shifts – moving funds from one part of the business to another – but in a competitive environment they take on a much greater significance. A system built on these support flows may indeed achieve the universal service goals of the Act in providing comparable rates and universal access, but critics of this system have argued that it is far from efficient, and therefore, problematic. The current system, critics argue, distorts the competitive landscape through price manipulation and rate averaging, thereby sending the wrong entry signals to players, encouraging competitors where there would otherwise be none, and deterring competition in areas where it may naturally thrive. To increase efficiency, critics generally call for mechanisms that do away with they these "cross-subsidies" and more closely align prices with cost.[36] However, the goal of increasing efficiency must be tempered with the recognition that elimination of all subsidies and alignment of prices with their underlying costs could make telephone service unaffordable in large parts of the country and violate the legislative mandate to provide universal service "at just, reasonable, and affordable rates."

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[35] Crandall, Robert W., *After the Breakup: U.S. Telecommunications in a More Competitive Era*, Brookings Institute, February 1991, p. 23

[36] See, e.g. Robert W. Crandall, *Who Pays for Universal Service? When Telephone Subsidies become Transparent*, Brookings Institute, July 2000.

IV. Alternative Funding Options

During the CECA Universal Service Forum, some identified concerns about the sustainability and competitive neutrality of the fund. For the immediate future, if no new demands are placed on the funding mechanism, the current system should be adequate to handle the demands of universal service. However, there is potential for erosion of the interstate revenue base as well as the possibility for increased future demands on the system. CECA believes that the Universal Service Program, as a valuable social policy, needs to be strong and stable so that its mandate can be fulfilled. It must be flexible so that it can adapt to new demands that may arise in the evolving telecommunications environment. While the program is stable today, there are concerns that it might not be sustainable unless new funding sources are identified, if new services, including advanced services, are added, or even if the Low-Income program reaches its peak constituency. Universal service has benefited generations of Americans, and attention should be paid to make certain that it stays vibrant for generations to come.

The base from which revenue is currently generated is somewhat narrow, primarily collected by carriers from end users. This has led some to suggest that the higher rates associated with a narrow base is more inefficient than lower rates that would result from spreading the collections over a broader base. Consumer benefits come from raising funds in ways that minimize competitive, technological, and consumption distortions. With this in mind, some feel there is reason to be concerned about the current system having elements that are not competitively neutral, equitable and efficient, from both the consumer and the contributors' perspectives.

Based on these findings, it is prudent to examine options for modifying the universal service collection system to address the issues of sustainability, competitive neutrality, equity, and efficiency. The Forum considered several options that are discussed below. In any decisions made regarding funding, policymakers must carefully consider the pros and cons of each option. Given the mandate of the Act regarding universal service and the authority granted to the FCC by Congress, some of these options would require Congressional action before they could be implemented. The options include:

1. Include All Interstate Revenues

This option maintains the general structure of the current funding mechanism (as described in the previous chapter), but modifies it to create a broader the base of support from interstate service providers. Primarily this would mean including Internet service providers.

> **Pros:** This improves competitive neutrality among interstate service providers. The effect would be to enlarge the base of contributors so that individual service provider contributions are decreased. It improves the sustainability of the funds.

Cons: It imposes a financial burden on the Internet industry, and would require a re-examination of the statutory distinction made between *Telecommunication* Service Providers and *Information* Service Providers. It does not cure the structural inefficiencies and competition-discouraging consequences of the current fund, but would extend them into a market that is currently free of regulations. It does not address problems associated with bundles of interstate telecommunications, intrastate telecommunications, and non-telecommunications services in a single flat rate.

2. *Include Interstate* and *Intrastate Telecommunications Revenues*

This option includes all interstate telecommunications revenues, similar to the previous option, but would include all intrastate telecommunications revenues as well. An impact analysis, provided in Appendix 4 of this report, indicates that incorporating interstate and intrastate telecommunications revenues could reduce the contribution factor to as low as an estimated 2.5 percent instead of the current factor of roughly 6.8 percent.

Pros: Broadening the base increases the sustainability of fund. All telecommunications service providers benefit from expansion of the network. As flat rate packages consisting of interstate and intrastate revenues proliferate, it eliminates problems associated with identifying interstate revenues.

Cons: Intrastate telecommunications already contribute to universal service through explicit and implicit state subsidy mechanisms. Intrastate revenues are already subject to state taxes, so this change would result in a double taxation for carriers. Additional statutory changes would be necessary to coordinate federal and state tax codes to avoid the distortions caused by double taxation. Given the decision of the Fifth Circuit Court of Appeals, which precluded the FCC from including Intrastate revenues in its pool for the funding mechanism, this option would require a statutory change. It does not address problems associated with bundles of interstate telecommunications, intrastate telecommunications, and non-telecommunications services in a single flat rate.

3. *Include Support from All Services*

This option includes all interstate and intrastate telecommunications revenues, as in the previous option, but also includes the revenues from services and products that recover discounts under the Schools and Libraries fund. This option would include not only telecommunications service providers, but could also include companies that manufacture goods, such as networking equipment, or provide other services that are clearly not telecommunications services.

Pros: If universal service subsidies expand the reach and usage of the network and therefore benefit all companies providing services over the network and equipment for the network, then it is equitable to assess all companies that are beneficiaries.

Given the sheer size of the Schools and Libraries program – which takes up nearly half of the Fund – including revenue from subsidized products and services would help ease the perceived strain on funds out of the telecommunications loop.

Cons: Schools and Libraries contracts generally represent a very small portion of revenues of companies that provide services or equipment at a discount to schools and libraries. It would be very difficult to identify and measure which revenues should be included, unless fees are generated through additional sales or service taxes on the work performed. Additional taxes – in effect double taxing the work done through schools and libraries contracts – could lead to avoidance by contractors or higher prices for the goods and services, eliminating potential revenue gains. It does not address problems associated with bundles of interstate telecommunications, intrastate telecommunications, and non-telecommunications services in a single flat rate.

4. General Tax Funds

Instead of relying on telecommunications revenues to fund universal service, support for the Universal Service program could be drawn from general tax revenues through the normal federal legislative appropriations process. As a variation on this idea, general tax revenues could be used to supplement rather than replace telecommunications revenues. The supplement could be in the nature of a pure supplement to make up for funding shortfalls if they occasionally occur or, more boldly, to fund expansion of the program to underwrite broader access to advanced and enhanced network services as they become more essential tools for economic self-sufficiency. A further variation could be to use general tax revenues as a guarantee against shortfalls, much as existing federal facilities are available to guarantee borrowings or the solvency of financial institutions.

Pros: Payment through the general tax fund creates fewer market distortions and it is competitively neutral. This would also provide an open debate, which would be revisited annually, on the merits of universal service as a social policy. Ideally, the open debate could serve to strengthen the program in the sense that aspects of the program that do not hold up to scrutiny would be cut out, and items that have merit would be championed. It would also remove the stigma of the program for "flying under the radar." It may also dampen criticism of the program as a force for corporate welfare.

Cons: A general tax support may not be sustainable in the sense that there are many competing demands for tax dollars and the appropriation of funds would have to be renewed annually. Given the lack of assurances that the Congress would appropriate requisite funds from one year to the next (given competing claims on the budget) creates a very serious potential downside. Some have suggested that the program is now viewed favorably as a social program, but could attract the stigma of a "welfare" program if brought out in the open (i.e., the program is

valuable precisely because it is "flying under the radar"). Carriers may assert that an annual review of appropriated funds makes capital expenditures difficult to plan.

5. *Excise Tax*

A current excise tax on telecommunications services, originally created a century ago to fund the Spanish-American War, now funnels revenue into the general tax fund. The amount generated by this tax, at slightly less than three percent of all telephony revenues, is the approximate size of the current Universal Service Fund, and could be directed instead into the Universal Service Fund.

Pros: The excise tax is competitively neutral and very efficient to administer. Since the tax is already on the books, it could provide sufficient funding without having to create a new charge or assessment on customers.

Cons: It currently generates more revenues than are needed, which could lead to an unnecessary expansion of Universal Service Fund. Retargeting or earmarking the revenue raised through this tax to the Universal Service Fund would require legislative action and would entail a loss of revenues to the U.S. Treasury.

6. *Flat Per-Line Assessment*

One way to collect universal service funds from all users of the public switched telephone network is to make the assessment on a per-line basis. Since it is easier to identify lines than revenues, this would be an administratively efficient mechanism. Questions of equity could be addressed my setting the per-line rates higher for business lines than for residential lines, and the rate can easily be dropped to zero for low-income consumers. Analysis in Appendix 3 of the report shows three different levels of monthly per-line assessments (from $0.75 to $1.25) and the resulting impact on business assessments.

Pros: All beneficiaries of the public switched network would contribute, regardless of means or technology. Per-line charges are less distorting than usage-based charges. Given the large number of lines, the per-line charge would be relatively small. The per-line charge could be modified by class of customer to take into account equity issues (residential vs. business customers; voice-grade vs. high bandwidth lines) and competitive neutrality issues (Centrex vs. PBX lines). Since the carrier would simply be the collection agent, they would avoid controversial add-ons for uncollectibles and administrative costs. It is possible this could be done without a statutory change.

Cons: All surcharges have the potential of being confusing to consumers, who may dislike a charge that does not take into account actual usage. It could be controversial to set different rates for different classes of customers. It could create a disincentive for users to get multiple lines. Since the 1996 Act specifically refers

to collecting universal service from carriers, not customers, some may interpret this to mean that the FCC lacks the authority to make this change. Some may view this approach as a regressive tax since subscribers of all means and levels of use pay the same amount.

7. Per-Number Charge

Funding for universal service could be collected via a surcharge on every telephone number. This would apply to the actual numbers in use, as well as new phone numbers that are auctioned off in blocks. Similar to the Per Line Assessment, but would not cover any telephony that does not use traditional means, such as IP telephony.

Pros: Per number charges would be less distorting than usage-based charges. All beneficiaries of the public network would contribute. The FCC is already considering charging for numbers, and has suggested that the revenues could be a potential Universal Service Fund source.

Cons: This would complicate the FCC proposal for setting market prices to allocate numbers, and could be difficult to draw distinctions between numbers associated with businesses and residences. The charges would miss revenue from all telephony that does not go through a traditional telephone line (*e.g.,* IP telephony that goes through T-1, DSL, and cable modems). There would be a question of whether the charges would only be applied to numbers in use or all numbers, including ones in reserve.

V. Eligibility Issues

The Universal Service Program has been designed to ensure that quality services are available at just and reasonable rates to *ALL* Americans.[37] Critics of the system say it has failed to meet its goals and point to the fact that not everyone in the United States has a phone.[38] Does this suggest that these Congressional mandates are not being adequately implemented?

The CECA Universal Service Forum undertook an analysis of issues regarding the qualification for two of the programs in the Universal Service program, the High-Cost and Low-Income programs. Because of time constraints, the Forum did not examine the eligibility requirements and issues associated with the Schools and Libraries Program (E-Rate) or the Rural Health Program. The eligibility processes for these programs are central to the dissemination of the monies in the program and therefore to the ultimate success of its programs. The topic of eligibility for support from the program was divided into two distinct areas of USF administration and policy for purposes of examination in the Forum:

- Consumer eligibility for Lifeline and Link-up services
- Carrier eligibility for funding to serve high cost areas

Some Universal Service Fund allocations go to states to support specific customer services offered at discounted prices, i.e., Lifeline and Link-up, while other funds support carriers for providing services to high-cost franchise areas. In addition to issues that relate directly to standards of eligibility in both categories, the CECA Universal Service Forum also addressed issues regarding portability of support and disaggregating support areas.

A. Consumer Eligibility for Universal Service Funds: Lifeline and Link-up Programs

The Lifeline and Link-up programs both fall under the umbrella of the USF's Low-Income Program, which is administered by the Universal Service Administrative Company (USAC). The program helps offset telephone service connection (Link-up) and monthly service fees (Lifeline) for low-income consumers. Offering the low-income program services is a condition of a carrier being designated an Eligible Telecommunications Carrier (ETC) for purposes of receiving USF support for a given service area. A description of both the Link-up and Lifeline programs can be found in Part Four of this paper.

Qualification for the benefits of the low-income program is based on criteria established by each individual state or default criteria established by the FCC. States are required to establish narrowly targeted criteria based on income or factors directly related to income.

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[37] 47 U.S.C. § 254(b).

[38] We acknowledge evidence that some Americans *choose* not to have phone service, but in this paper we feel it is more appropriate to focus on the ability to access service, and not personal choice.

In states that have not set criteria themselves, a consumer must participate in one of the following federal programs to qualify: Medicaid, Food Stamps, Social Security Income (SSI), Federal Public Housing Assistance, Low-Income Home Energy Assistance Program (LIHEAP), and in the case of Indian reservations, the receipt of Bureau of Indian Affairs general assistance.

1. Lifeline and Link-up

The Lifeline program guarantees access to a menu of basic services[39] and subsidizes portions of monthly charges that appear on consumers' phone bills. The amount of support for consumers varies based on supplemental contributions from states, but ranges from $3.50 to $7 per month.

The Link-up program lowers a low-income consumer's cost of initiating phone service. The program covers a reduction of one-half of the telephone company's charge for initiating service with a maximum of $30. The program also provides for an interest-free deferred payment plan for initiation charges.

To get some sense of the success of the low-income programs in providing service to those who would otherwise not be able to afford it, it is useful to examine the level of telephone penetration in households. Data show the current national telephone penetration level is just over 94 percent as of July 2000 (see Table Two).

While a national coverage of 94 percent of households may seem promising in broad terms, this equates to almost 17 million people in households without telephones.[40] Even given those who either choose not to have a phone or are satisfied having access to a nearby phone, this number represents an unacceptably large number who do not have access to even basic telecommunications services in their residences.

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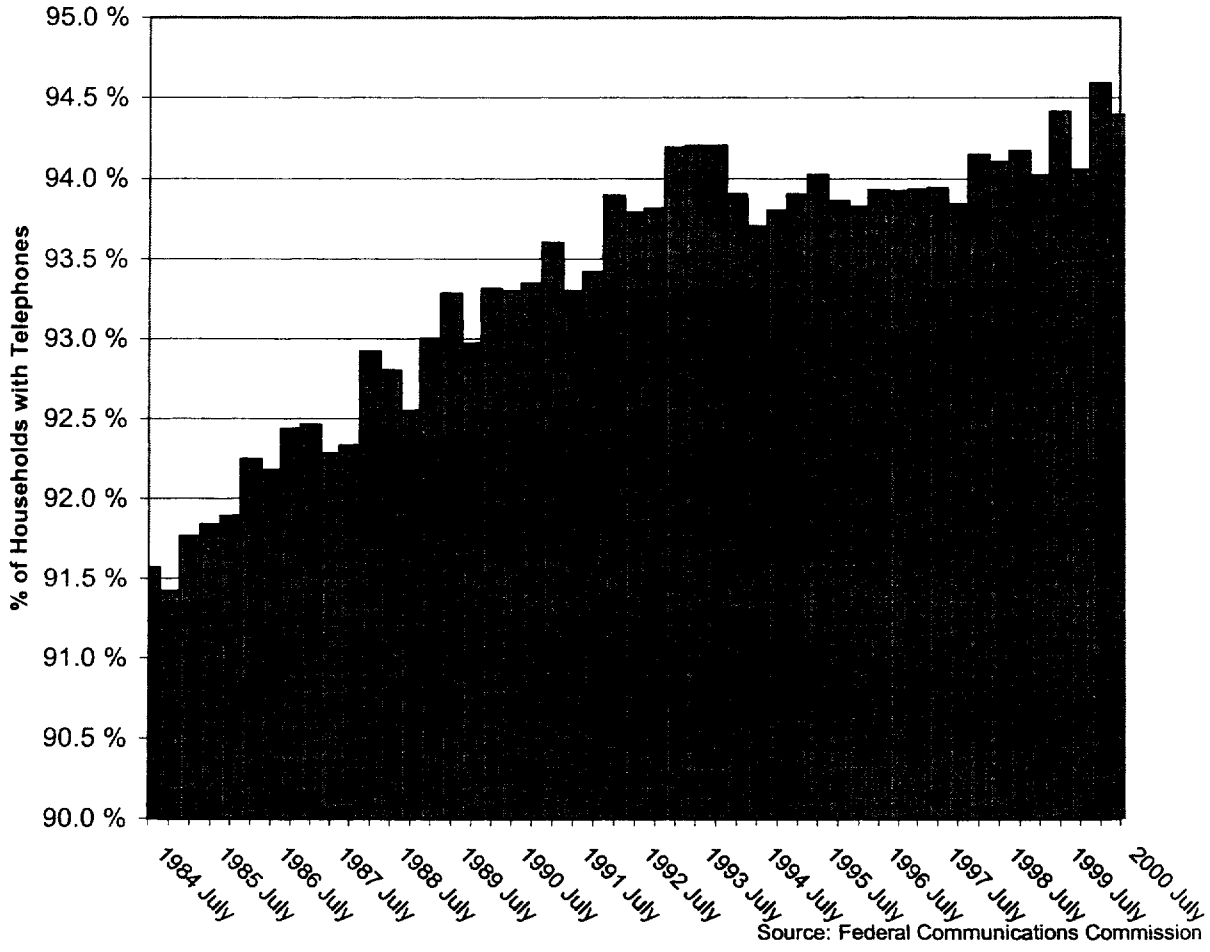
[39] All qualifying low-income consumers will receive the following services: voice grade access to the public switched network; Dual Tone Multi-frequency; single-party service or its functional equivalent; access to emergency services; access to operator services; access to interexchange service; access to directory assistance; and toll limitation free of charge (provided that the carrier is technically capable of providing toll limitation). Toll limitation includes both toll blocking (which prevents the placement of any long-distance calls) and toll control (which limits the amount of long-distance calls to a pre-set amount selected by the consumer). (*See* http://www.fcc.gov/Bureaus/Common_Carrier/Factsheets/loincome.html).

[40] The number of individuals without a phone in their household was arrived at by multiplying the number of unserved households by 2.64, the most recent census data available (1990) for the average number of individuals in a household.

Table Two: Telephone Penetration Rates



When examined at a more granular level, the data show that telephone coverage rates vary widely among different states. According to FCC data (see Table Three), the state with the highest level of telephone penetration in 1999 was North Dakota with 97.3 percent of households having telephones and the state with the lowest penetration was Mississippi with 88 percent. Examination at a state level is relevant for this discussion because the low-income programs are administrated by the states.